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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FALLS CHURCH, VA 22041

EXAMINER

CLEVELAND, MICHAEL B

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/759,128	TSAI, HE-TING	
	Examiner	Art Unit	
	Michael Cleveland	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10 and 17-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-10 and 17-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/17/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

800-0

DETAILED ACTION

Drawings

1. A replacement drawing for Fig. 3 was received on 6/21/2005. This drawing is accepted.

Specification

2. The amendment filed 6/21/2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The alterations to paragraphs [0018]-[0020]. There is no clear nexus between the disclosed protecting layer and element 18 of the drawings. There is particularly no nexus between the disclosed OLED device and element 20 of the drawings because element 20 does not appear to be an entire OLED device. There is no disclosure whatsoever to support that element 20 is covered by element 18, as stated by the amendment to paragraph [0019].

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 1, 3-10, and 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai et al. (U.S. Patent 6,447,879, hereafter '879). (Ueda (U.S. Patent 6,468,676) is cited as evidence.)

'879 teaches

preparing an OLED sample section for electron microscope transmission electron microscope examination (col. 7, lines 29-46; col. 22, line 55-col. 23, line 3) comprising:

Art Unit: 1762

providing an OLED device including a substrate of NESA glass (1) (which is a substrate with a first electrode on said substrate; see '676, col. 18, lines 35-42), an organic layer (6,7) on said first electrode, and a second electrode (16) on said organic film (col. 22, lines 36-42).

'879 does not explicitly teach that the sample is prepared by forming a protecting layer over a surface of said OLED and performing milling procedure on said OLED device to obtain the sample section. However, the Examiner takes Official Notice that it is very well known in the art of transmission electron microscopy to form a TEM section sample by depositing a protective film and milling the sample of interest to achieve a TEM sample of the desired thickness. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a protective layer and milled the OLED sample of '879 to prepare it for TEM examination because '879 teaches that TEM examination of the OLED is desired, and the method of protecting and depositing described above is well known in the art of transmission as suitable for preparing sample sections for TEM. It is further the examiner's position that the features of the dependent claims: the use of platinum or tungsten as the protective material, the use of focused ion beams, the use of coarse, intermediate, and fine milling processes, and overlapping ranges of the claimed sample thickness and protecting layer thicknesses are also well known in the art.

5. Claims 1, 3, 5, 7-10, 17-18, 20, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai '879 as applied to claim 1 above, and further in view of Li et al. (U.S. Patent 6,194,720, hereafter '720).

'879 is discussed above but does not explicitly teach that the sample is prepared by forming a protecting layer over a surface of said OLED and performing milling procedure on said OLED device to obtain the sample section, and specifically does not teach the use of a sample thickness of about 0.2 microns, milling via focused ion beam, a platinum protecting layer, nor the use of coarse, intermediate, and fine milling procedures.

'720 teaches that suitable features for the preparation of TEM section samples include forming a protective layer on the sample and thinning (i.e., milling) by a technique such as a

Art Unit: 1762

focused ion beam (col. 5, line 53-col. 6, line 27). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used such the method of '720 as the particular method of preparing the TEM samples of '879 with a reasonable expectation of success because '720 teaches that its methods are suitable for preparing such samples. '720 teaches a section thickness of about 0.2 microns (col. 6, lines 55-60), which overlaps Applicant's claimed range. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549.

Claims 3 and 18: '720 teaches focused ion beam (FIB) milling (col. 5, lines 53-64).

Claims 5 and 20: '720 teaches a Pt protective layer (col. 6, line 19-21).

Claims 7-9, 22-24: '720 teaches several progressively finer milling procedures (i.e., coarse, intermediate, and fine milling) (col. 2, lines 10-18).

6. Claims 1, 3-6, 10, 17-21, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai '879 as applied to claim 1 above, and further in view of Shofner (U.S. Patent 6,300,631, hereafter '631).

'879 is discussed above but does not explicitly teach that the sample is prepared by forming a protecting layer over a surface of said OLED and performing milling procedure on said OLED device to obtain the sample section, and specifically does not teach the use of a sample thickness of 0.2 microns, milling via focused ion beam, platinum or tungsten protecting layer, nor a protecting layer thickness of 2-3 microns.

'631 teaches that suitable features for the preparation of TEM section samples include forming a protective layer on the sample and thinning (i.e., milling) by a technique such as a focused ion beam (col. 1, lines 13-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used such the method of '631 as the particular method of preparing the TEM samples of '879 with a reasonable expectation of success because '631 teaches that its methods are suitable for preparing such samples. '631 teaches a section thickness of about 0.2 microns (col. 2, lines 29-31), which overlaps Applicant's claimed range. The subject matter as a whole would have been obvious to one of

Art Unit: 1762

ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549.

Claims 3 and 18: '631 teaches focused ion beam (FIB) milling (col. 1, lines 14-20).

Claims 4 and 19: '631 teaches a protection layer thicknesses of 1 micron (col. 4, lines 53-55) and 1-2 mm (col. 1, lines 17-19), and therefore effectively discloses an effective range of thicknesses of at least 1 micron- 2 mm. The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549.

Claims 5-6 and 20-21: '631 teaches a Pt or W protective layer (col. 4, line 50-55).

Response to Arguments

7. Applicant's arguments filed 6/21/2005 have been fully considered but they are not persuasive.

Applicant argues that the claimed range is outside those disclosed by Li and Shofner because they eliminate the endpoint of 2 microns. The argument is unconvincing because both Li and Shofner teach that the range includes about 2.0 microns, which is well accepted as included values both above and below 2 microns, and therefore overlaps Applicant's claimed range. However, Applicant is also reminded that it has been settled that a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties.

Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). (MPEP 2144.05.I.)

Applicant's arguments regarding Photos 1-4 is unconvincing because they do not represent a comparison between the claimed range and the closest prior art (Both Li and Shofner teach 0.2 microns.) and because the conditions of the experiment are not detailed.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grunewald (U.S. Patent Application Publication 2004/0164242), Shaapur et al. (U.S.

Art Unit: 1762

Patent 6,188,068), and Sadayama (U.S Patent 6,686,600) are cited as further evidence of known TEM preparation procedures.


9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Monday-Thursday, 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Michael Cleveland
Primary Examiner
Art Unit 1762

mbe
8/16/2005